WILDLIFE AND VERTEBRATE PESTS IN EGYPT

A. MAHER ALI, Agriculture College, Assiut University, Cairo, Egypt
HASSAN A. HAFEZ, Zoo, Cairo, Egypt

ABSTRACT: The conservation of Egyptian wildlife is discussed. Control measures are reviewed for rodents and birds, especially the house sparrow. Because of the high dam permanent irrigation has resulted in Arvicanthis becoming a more serious invader of rural buildings.

Since wildlife were important to Egyptians historically (theologically, economically and sometimes socially), they were well taken care of. For example, baboons were sacred, thus every newly married couple payed fees to have one, and when the baboons died there were more fees for its embalming and for obtaining another one. Revenue from this "monkey business" was used to finance construction projects. Important animals, e.g. giraffes, were of such high priority they were kept in private gardens. The wild cat, Ibis, and the sacred falcon, "Horus," were worshiped during different dynasties. The cobra was considered as the faithful guardian of the treasures of pharaohs tombs; history tells of the story about Cleopatra with an Egyptian cobra. A good part of the Eastern Desert by the Red Sea is now inhabited by the tribe "Maaza," meaning the "goatsmen." Apparently, the tribe started far back in history of depending upon the wild goats found in the area for their livelihood and development.

Then wildlife was neglected for a rather long period. The impact of the first world war on wildlife fauna resulted in the revival of interest and subsequent Ministrial Laws were issued during 1917, '22, '53, and '67 to provide protection of 53 species of migrating birds and 6 animals, namely: Ammotragus L. lervia, Capra nubiana, Gazella leptoceros, Gazella dorcas, Acinonyx jubatus, and Felis pardus. Besides the protected animals the present Egyptian fauna also includes: antelopes--Capra nubiana and Addax nasomaculatus. Other animals are Hyaena striata, Equs asinus, Fennecus Zerda, Vulpes ruppelli, Canis lupaster, Lepus arabicus, Paraechinus aeshiopicus, Herpestes ichneumon, Crocidura floweri, C. religiosa, and C. olivieri.

According to the present available information, Egypt is comparatively poor in its mammalian fauna, in species and in number of individuals, due to the vast deserts and their severe ecological conditions. Unfortunately, there is no up-to-date information about the wildlife fauna; but a systematic survey plus good management will help develop the existing populations of species. After the construction of the high dam and the lake behind it, the growth of the gazelle herds around the new lake is obvious. The crocodile, Crocodilus niloticus, is now increasing in number due to the lake.

An Egyptian Association for the Conservation of Natural Resources has recently been formed to help environmental planning, to obtain an up-to-date survey and management of wildlife, in addition to developing our natural reserves. For the time being there is a conservation effort to help the wetland birds near the Canal Zone. More wetland conservation is needed in this area, because the theory is that the more severe the winters are in the continents from which birds migrate, the higher the population will be that visits the southern region of the Mediterranean, including this area.

RODENTS

Rodent fauna

a. The wild fauna includes: Gerbellus gerbillus gerbillus, G.g. asyutensis, G. pyramidum, Genus nesokia, Jaculus orientalis, Meriones crassus, M. Lybicus, Psammomys obesus, and Spalax ehrenkergi algyptiacus.

b. Commensal rodents include: Arvicanthis niloticus, Rattus norvegicus, R.r. alexandrinus, R.r. frugivorous, R.r. rattus, and Mus musculus.

Control of Rodents in Rural Areas

1. The most attractive crop for rodents is sugarcane followed by dates, some vegetables and grains. In sugarcane plantations in particular, whenever the mongoose is present, no rodent problem arises.

2. Arvicanthis is the most dominant species in rural areas followed by other species. It is foraging during the morning and the afternoon hours and can cross a 10 meter wide canal.

3. This species is the least sensitive species to anticoagulants.

4. In areas with high density of rodents, best control results are obtained applying 3 percent zinc phosphide baits, and repeated again after six months. In areas of cash crops, anticoagulants should follow the zinc phosphide treatments to prevent the low population from recovering. Through years of study of rural rodent populations show that in general there are usually two population peaks, during March and September. The carrying out of rodent control campaigns prior to March is appreciated due to socio-economic conditions. During this period canal and drainage systems are drained for reconstruction and maintenance.

5. In semi-arid areas Gerbellus and Nesokia may cause some damage to crops. Moreover, in such areas they may meet with commensal rodents, providing the area is under cultivation.

6. Difficulties that are encountered when executing rodent control operations are mostly due to the lack of appreciation for the need to rat-proof commercial buildings and houses, in addition to a lack of interest in such campaigns. Training and workshops help much in this respect.

Impact of High Dam and Change of Irrigation System on Rodents

The building of the high dam and the change of the irrigation system to a perennial basis had the following effects on rodents:

1. Formerly Arvicanthis was not known to visit rural buildings, but it has now changed its habit and can be found occasionally visiting houses during scarcity of food in the field.

2. Before the construction of the high dam, the annual increase of flood water level caused rats to desert their burrows and invade surrounding areas and Nile yaughts. Now, since the water level is almost stable because of the dam, the seasonal invasions by rodents has stopped.

BIRDS

The economic birds include: Passer domesticus, P. hispaniolensis, and Streptopelia senegalensis.

The House Sparrow

1. The dominating site for this bird is evergreen trees with intensive foliage. It attacks grains stored in the open during winter times. Once food is available in fields most birds shift to attack available seedlings, blooming peas and beans, barley and wheat during the milk stages, and lastly sunflowers and sorghum. But such birds are also busy collecting insects for their young, whose guts may contain over 60 percent insects.

2. The sparrow used to attack, on a limited scale, open granaries, warehouses and fields. At that time they were not considered as serious pests. Then farmers were managing this bird by using different types of scaring devices, such as their voice and lights. Sparrows have gradually increased in number with losses, due to their attacks, gradually increasing too.

3. This change of status was accompanied by other changes in the environment:

   a. Chlorinated camphenes were the major pesticides applied for the control of agricultural pests till 1962; to be replaced by other types of insecticides including Endrin and other cyclodienes. By the end of the 60's the major pesticides were organic phosphates and carbamates.

b. Birds of prey decreased gradually during the 50's and 60's. By the beginning of the 70's they had started to increase in numbers, but only slowly.

Control Measures

1. The Extension Service advises farmers to grow their crops during the optimum season, which requires the least time, since early cultivation suffers too much from the house sparrow.

2. Ground spraying of trees with 0.25 percent Lebaycid a.i. did not prove to be satisfactory from a practical point of view.

3. A large scale experiment to control the house sparrow mechanically was done by removing nests from one half million trees, four times a year (April - July), and for two successive years. The following indicates the ratio of nests removed per tree and clutches collected per nest.

	Nests / Trees		Clutches / Nests	
	1974	1975	1974	1975
April	1.26	1.29	2.37	1.83
May	0.97	0.98	2.26	1.87
June	1.09	1.02	2.39	1.89
July	0.89	0.89	1.93	1.20

Results show that the number of nests removed per tree decreased during 1974 due to continuous removal but this decrease did not have an impact on the following season. However, it is noticed that number of removed clutches per nest decreased gradually and was at a higher rate during the following season. Apparently, the removal of nests seems to affect the number of clutches, which may have an impact on the population density of the bird. Same results were obtained since young birds leaving their untouched nests reached 16.57 per nest per season, as compared with only 6.72 being the average clutch size per nest that was collected from nests which were removed weekly during the whole season.

4. The removal of nests just prior to the breeding season seems to be much more effective in reducing the number of clutches the next season.

5. For the time being, the following are the recommendations for managing this bird:

a. Concentrate the campaign of removing nests from trees during the period September to March.

b. Good coverage of grains stored in the open by using local materials.

c. Use any available device to scare and/or control sparrows concentrating around grain stores and warehouses during winter time.

These steps will also help to minimize the damage caused by the Spanish sparrow and the mourning doves. These two birds are not so important as compared with that due to the house sparrow; their damage is mostly directed to open granaries.

6. The above mentioned recommendations must be used if grains are stored in the open. But there is no alternative but to build grain silos as soon as possible, which will help lower the present high population of house sparrows and minimize losses caused by birds and rodents.